HematoVision - Functional & Performance Testing Report

Date: 23rd June 2025

Team ID: LTVIP2025TMID35127

Project Name: HematoVision - Blood Cell Classification using Deep Learning

Test Type: Functional & Performance Testing

Test Scenarios & Results

Test Case ID	Scenario (What to test)	Test Steps (How to test)	Expected Result	Actual Result	Status
FT-01	Image Input Validation	Upload a valid image and an invalid format (e.g., `.txt`)	Accepts image only, rejects invalid files	Valid image accepted, invalid format rejected	✅ Pass
FT-02	Class Prediction Accuracy	Upload known blood cell images (e.g., monocyte, neutrophil)	Correct classification label is displayed	Predicted classes matched labels	✅ Pass
FT-03	Model Response Workflow	Upload file → Press Predict	Response includes predicted class + cell image preview	Working as expected	✅ Pass
FT-04	Flask App Route Validation	Access `/` and `/predict` endpoints	Home page loads, prediction works	All endpoints responded correctly	✅ Pass
FT-05	File Upload UI Functionality	Check file browse and	File uploaded, name visible	File selected correctly and sent	✅ Pass

		preview actions			
PT-01	Model Response Time	Upload and record prediction time	Prediction completes under 3 seconds	Avg time: 2.1s	✅ Pass
PT-02	Concurrent Predictions	Send 3–5 simultaneous uploads using multiple browser tabs	All return results without lag or crash	Smooth performance observed	✅ Pass
PT-03	Load Handling on File Upload	Upload large-size but valid image files	Model should still respond accurately	Responded well up to ~5MB image	✅ Pass
PT-04	Dataset Handling During Training	Load Kaggle dataset during model training	Model trains without memory overflow	Completed training with 99% accuracy, no crash	✅ Pass
PT-05	Invalid Image Handling	Upload a non-blood-cell image	Should show error or fallback prediction	Error handled gracefully	✅ Pass

📌 Notes:

- Testing performed manually through Flask app running locally.

- Dataset used: Kaggle Blood Cell Dataset (https://www.kaggle.com/datasets/paultimothymooney/blood-cells/data)

- Model file used: Blood Cell.h5

- Flask routes tested: `/`, `/predict`